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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF:

Kenichi YAMAGA, et al.

SERIAL NO: 10/529,417

GROUP: 1734

FILED: March 30, 2005

EXAMINER:

FOR: SINGLE-SUBSTRATE HEAT-PROCESSING APPARATUS FOR  
SEMICONDUCTOR PROCESSING SYSTEM

**LETTER**

Mail Stop DD  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith are an International Preliminary Report on Patentability and Written Opinion for the Examiner's consideration. The reference(s) cited therein have been previously filed on March 30, 2005.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

*Fred L. Braun*

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(OSMMN 03/06)

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

SUZUYE, Takehiko  
c/o Suzuye & Suzuye  
7-2, Kasumigaseki 3-chome  
Chiyoda-ku, Tokyo 1000013  
JAPON

RECEIVED  
2 MAY 19 2006 F  
SUZUYE & SUZUYE

|  |  |
|--|--|
| Date of mailing (day/month/year)<br>11 May 2006 (11.05.2006) |  |
| Applicant's or agent's file reference<br>03S1800P            | IMPORTANT NOTIFICATION   |
| International application No.<br>PCT/JP2004/007572           | International filing date (day/month/year)<br>26 May 2004 (26.05.2004) |
| Applicant<br>TOKYO ELECTRON LIMITED et al                    |  |

## 1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

|   |   |
|---|---|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland | Authorized officer<br><br>Masashi Honda |
| Facsimile No.+41 22 740 14 35   | Facsimile No.+41 22 338 70 10           |

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

|  |   |  |
|--|---|--|
| Applicant's or agent's file reference<br>03S1800P  | <b>FOR FURTHER ACTION</b>   | See item 4 below   |
| International application No.<br>PCT/JP2004/007572   | International filing date ( <i>day/month/year</i> )<br>26 May 2004 (26.05.2004) | Priority date ( <i>day/month/year</i> )<br>17 June 2003 (17.06.2003) |
| International Patent Classification (8th edition unless older edition indicated)<br>See relevant information in Form PCT/ISA/237 |   |  |
| Applicant<br>TOKYO ELECTRON LIMITED  |   |  |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

|   |   |
|---|---|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland | Date of issuance of this report<br>01 May 2006 (01.05.2006)                                       |
| Facsimile No. +41 22 740 14 35  | Authorized officer<br><br><div style="text-align: center; font-weight: bold;">Masashi Honda</div> |
| Telephone No. +41 22 338 70 10  |   |

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**03S1800P**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2004/007572**

International filing date (day/month/year)

**26.05.2004**

Priority date (day/month/year)

**17.06.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**TOKYO ELECTRON LIMITED**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/007572

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/JP2004/007572

|   |   |                  |     |
|---|---|------------------|-----|
| <b>Box No. V</b>  | <b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b> |                  |     |
| <b>1. Statement</b>   |   |                  |     |
| Novelty (N)   | Claims  | 2-4, 8, 10-14    | YES |
|   | Claims  | 1, 5-7, 9, 15-17 | NO  |
| Inventive step (IS)   | Claims  | 2-4, 8           | YES |
|   | Claims  | 1, 5-7, 9-17     | NO  |
| Industrial applicability (IA)   | Claims  | 1-17             | YES |
|   | Claims  |                  | NO  |
| <b>2. Citations and explanations:</b>   |   |                  |     |
| <p>Document 1: JP, 2000-340501, A (Applied Materials Inc.), 8 December, 2000 (08.12.00)</p> <p>Document 2: JP, 2002-343708, A (Toshiba Corp.), 29 November, 2002 (29.11.02)</p> <p>Document 3: JP, 9-8108, A (NEC Corp.), 10 January, 1997 (10.01.97)</p>   |   |                  |     |
| <p><b>Claims 1, 5-7, 9 and 15-17</b></p> <p>The subject matters of claims 5-7, 9 and 15-17 do not appear to be novel in view of document 1 cited in the ISR. "A gas supply system" in document 1 corresponds to a "dispersion member" in the invention described in claim 1.</p> <p>"A support ring" in document 1 corresponds to "a support plate" in the invention described in claims 5 and 6.</p> <p>In addition, a device in document 1 has a heating-gas exhaust passage, a temperature-detection member, a cooling-gas supply part, etc.</p>   |   |                  |     |
| <p><b>Claims 10-14</b></p> <p>The subject matters of claims 10-14 do not appear to involve an inventive step in view of documents 1-3 cited in the ISR. Document 2 describes a support pin that rises/falls, holding a substrate to be treated, in a single-wafer type heat-treatment apparatus using heating gas. A person skilled in the art could have easily applied the support pin described in document 2 to the invention of document 1. Document 3 describes a heater that comes to the entirety of a plurality of blowing openings to produce heating gas in a single-wafer type heat-treatment apparatus using heating gas. A person skilled in the art could have easily applied the heater described in document 3 to the invention of document 1.</p> <p>The other constitutions would be obvious to a person skilled in the art, or could be easily applied.</p> |   |                  |     |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/007572

Box No. VI Certain documents cited

1. Certain published documents (Rule 43bis.1 and 70.10)

| Application No.<br>Patent No. | Publication date<br>(day/month/year) | Filing date<br>(day/month/year) | Priority date (valid claim)<br>(day/month/year) |
|-------------------------------|--------------------------------------|---------------------------------|---|
| JP 2003-188077 A (P, X)       | 04.07.2003                           | 19.12.2001                      | 19.12.2001                                      |

2. Non-written disclosures (Rule 43bis.1 and 70.9)

| Kind of non-written disclosure | Date of non-written disclosure<br>(day/month/year) | Date of written disclosure<br>referring to non-written disclosure<br>(day/month/year) |
|--------------------------------|--|---|
|--------------------------------|--|---|